

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Pelican Compressor Station
Liberty Gas Storage, LLC
Hackberry, Cameron Parish, Louisiana
Agency Interest Number: 158683
Activity Number: PER20080001
Draft Permit 0560-00268-V0**

I. APPLICANT:

Company:
Liberty Gas Storage, LLC
101 Ash Street
San Diego, CA 92101

Facility:
Pelican Compressor Station
400 Black Lake Road, Hackberry, Cameron Parish, Louisiana
Approximate UTM coordinates are 460.535 kilometers East and 3318.645 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

Liberty Gas Storage, LLC proposes to construct and operate a salt dome natural gas storage facility and compressor station (SICC 4922), Pelican Compressor Station. In addition, Liberty Gas Storage will construct and operate in-field piping to and from the wells, as well as, pipelines to connect the storage facility to the interstate pipeline system. The compressor station is located at 400 Black Lake Road, Hackberry, Louisiana.

This is the initial Part 70 operating permit for the facility.

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

Liberty Gas Storage, LLC submitted a permit application on June 23, 2008 requesting an initial Part 70 operating permit. Additional information dated July 9, 2008 was also received.

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A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge, and in *The Cameron Parish Pilot*, DeQuincy. A copy of the notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List. The application and proposed permit were submitted to the East Baton Rouge Parish Library. The proposed permit was also submitted to US EPA Region 6. All comments will be considered prior to the final permit decision.

Project description

The proposed project will include the conversion of three (3) existing brine caverns located on site to natural gas storage caverns and the development of a fourth natural gas storage cavern in addition to providing compression and dehydration for the four (4) caverns once they become operational. The initial scenario (Phase I) will be temporary as it is associated with development of the fourth natural gas storage cavern and debrining the existing three (3) caverns. The second operational scenario (Phase II) will represent the normal operation of the operational compressor station.

The temporary operating scenario (Phase I) will begin during the solution mining of the salt dome to create a fourth brine cavern. All pumping equipment associated with the solution mining and brine disposal operations will be electric. The solution mining operation is expected to start by using the limited electric service provided at the site by the local utility; however, supplemental electric generation will be required to solution mine at the optimum rate and de-brine caverns 1, 2, and 3. Two (2) natural gas fired Caterpillar G3516B LE generator sets, rated at 1818 kW each (EQT015 and 016), will be installed to provide electrical power.

Also during the temporary operating scenario (Phase I), the three (3) existing brine caverns will be converted to natural gas storage caverns by displacing the brine within each cavern with natural gas. When the development of the fourth cavern is completed it will also require debrining. Debrining will be accomplished with the continued use of electric pumps partially powered by the natural gas-fired generators and the introduction of four (4) Caterpillar (CAT) G3616 natural gas-fired compressor engines (EQT001 – 004) to inject natural gas into the caverns for the conversion from brine caverns to natural gas storage caverns. The CAT G3616 compressor engines will each be equipped with a catalytic converter to control emissions of carbon monoxide (CO), volatile organic compounds (VOC), and formaldehyde. Emissions sources operational during the temporary operating scenario include the two (2) natural gas-fired generators (EQT015 and 016) with associated lube oil tanks, up to three (3) CAT G3616 natural gas-fired compressor engines operating concurrently, a triethylene glycol dehydration unit (EQT008 and EQT009), a temporary 21,000 gallon diesel blanket tank (EQT014), and several associated storage tanks.

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At the completion of the temporary operating scenario, the diesel blanket tank will be removed (EQT014), the two (2) gas-fired generators (EQT015 and 016) will be converted to the two (2) emergency generators EQT006 and EQT007. In addition, a diesel emergency generator (EQT005) will begin standby service and the Pelican Compressor Station will begin normal operation. The temporary operating scenario is anticipated to last approximately 36 months.

The normal operating scenario (or normal operations, Phase II)) for the Pelican Compressor Station will consist of four (4) CAT G3616 natural gas-fired compressor engines (EQT001 – 004) operating concurrently, each equipped with a catalytic converter, a triethylene glycol dehydration system (EQT008 and EQT009) controlled with a condenser (EQT009) and combustion device (EQT008), two (2) natural gas-fired emergency generators (EQT006 and 007), a diesel-fired emergency generator (EQT005), and several storage tanks.

The normal and ongoing operation at the Pelican Compressor Station (Phase II) will consist of injection and withdrawal of natural gas from the storage caverns as market demands dictate. The compression required for injection and withdrawal of natural gas will be provided by four (4) CAT G3616, natural gas-fired reciprocating engine-driven compressors (EQT001 – 004). The emissions from the compressor units will each be controlled with a catalytic converter and will be housed in a fully enclosed acoustically designed building to limit the noise impact to the surrounding area.

Natural gas, when withdrawn from the storage caverns, will be dehydrated by contact using triethylene glycol in a 500 MM scf/day glycol dehydration system. The dehydration system will consist of a still column, a flash tank, a reboiler, and a condenser. In this system the natural gas comes in contact with the glycol via a gas/glycol contact tower equipped with structured packing. The water in the gas adheres to the glycol and the resulting glycol-water mixture is sent to the flash tank. The flash gas from the flash tank is routed to the reboiler (EQT008) for use as a supplemental fuel. The glycol-water mixture is then heated in the still column (EQT009) to vaporize the water and regenerate the glycol for reuse. The still column emissions will be controlled by the condenser with the un-condensable vapors then routed to the reboiler for incineration. Dehydrated gas will then be put into the pipeline system for transmission and distribution.

Compressor engines CNG-01 through CNG-04 are 4735 horsepower reciprocating engines operated a total of 26,280 hours per year based on a rolling average.

There are no facilities under common ownership and contiguous with Pelican Compressor Station.

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Permitted Air Emissions

Estimated emissions from the facility in tons per year are as follows:

| <u>Pollutant</u> | <u>Phase I (Construction)</u> | <u>Phase II (Operation)</u> |
|------------------|-------------------------------|-----------------------------|
| | <u>Proposed</u> | <u>Proposed</u> |
| PM ₁₀ | 0.10 | 0.66 |
| SO ₂ | 0.32 | 0.86 |
| NO _x | 132.00 | 138.69 |
| CO | 126.29 | 53.34 |
| VOC * | 68.36 | 56.70 |

***VOC LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs):**

| <u>Pollutant</u> | <u>Phase I</u> | <u>Phase II</u> |
|------------------------|-----------------------|--------------------|
| | <u>(Construction)</u> | <u>(Operation)</u> |
| | <u>Proposed</u> | <u>Proposed</u> |
| Benzene | 3.55 | 3.55 |
| Ethyl benzene | 0.09 | 0.09 |
| Formaldehyde | 9.56 | 5.18 |
| Methanol | 0.17 | 0.17 |
| Toluene | 1.50 | 1.50 |
| Xylene (mixed isomers) | 0.39 | 0.39 |
| n-Hexane | 0.27 | 0.27 |
| Total | 15.53 | 11.15 |

Other VOC (TPY): 52.83 45.55

Prevention of Significant Deterioration Applicability

Project emissions do not exceed PSD threshold, thus PSD does not apply.

Non-Attainment New Source Review (NNSR)

Project area is in attainment of the ambient air quality standards, thus NNSR does not apply.

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MACT requirements

These regulations define maximum achievable control technology (MACT) standards for stationary source categories of hazardous air pollutants (HAPs). These HAPs are listed in the Clean Air Act Amendments of 1990. The facility will comply with all applicable MACT requirements.

Air Modeling Analysis

Emissions associated with the proposed permit were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

IV. Regulatory Analysis

This permit was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP). Compliance Assurance Monitoring (CAM), Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NNSR) do not apply.

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

Prevention of Significant Deterioration Applicability

This permit does not include any new construction or modifications that require evaluation for PSD.

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Non-Attainment New Source Review (NNSR) Part 52

This permit does not include any new construction or modifications that require evaluation for NNSR.

New Source Performance Standards (NSPS) – Part 60

Subpart IIII: – Standards of Performance for Compression Ignition Internal Combustion Engines

This regulation applies to engine G-01 – Emergency Generator (EQT005). Pelican Compressor Station will comply with all applicable requirements of this regulation.

Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The CNG-01, CNG-02, CNG-03, and CNG-04 (EQT001-004) - Compressor Engines are defined as stationary spark Ignition Internal Combustion Engine. As such, these engines are subject to Subpart JJJJ. In addition, the engines G-02, G-03, G-02-Alt., and G-03-Alt. are subject to this subpart. The facility will comply with all applicable requirements of this regulation.

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories – Part 63

Subpart HHH: National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities

The Pelican Compressor Station is a minor source of hazardous air pollutants, thus Subpart HHH does not apply.

Subpart ZZZZ: Reciprocating Internal Combustion Engines (RICE) NESHAP

The Pelican Compressor Station is a minor source of hazardous air pollutants. The facility will comply with applicable requirements of this subpart.

Compliance Assurance Monitoring (CAM) – Part 64

Emission units at the Pelican Compressor Station are not equipped with an add-on control device to achieve compliance with an emission limitation or standard. As such, a CAM Plan is not required for Pelican Compressor Station.

40 CFR 68 – Chemical Accident Prevention

The Pelican Compressor Station does not produce, process, handle, or store any substance listed in 40 CFR 68.130 in an amount greater than the threshold quantity.